

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

Claim 1 (Original): An intermediate image transfer type of image forming apparatus comprising:

an image carrier;

an intermediate image transfer body;

primary image transferring means for transferring a toner image formed on said image carrier to one surface of said intermediate image transfer body; and

secondary image transferring means for transferring the toner image from said intermediate image transfer body to a recording medium;

wherein said primary image transferring means comprises primary bias applying means for applying a primary image transfer bias to the other surface of said intermediate image transfer body opposite to the one surface, and

wherein when a surface resistivity of said intermediate image transfer body is measured by a method that repeatedly applies a voltage v_1 of 200 V for a period of time t_1 of 60 seconds to said intermediate image transfer body and grounds said intermediate image transfer body for a period of time t_2 of 10 seconds a number of times N_1 of 1,000, a difference in absolute value between a logarithm of a first time of measurement and logarithm of a thousandth time of measurement is $0.5 \log \Omega/\square$ or below.

Claim 2 (Original): The apparatus as claimed in claim 1, wherein said primary bias applying means is controlled by constant-voltage control.

Claim 3 (Original): The apparatus as claimed in claim 1, wherein when a volumetric resistivity of said intermediate image transfer body is measured by a method that repeatedly applies a voltage v_2 of 50 V for a period of time t_3 of 60 seconds to said intermediate image transfer body and grounds said intermediate image transfer body for a period of time t_4 of 10 seconds a number of times N_2 of 1,000, a difference in absolute value between a logarithm of a first time of measurement and logarithm of a thousandth time of measurement is 2.1 log $\Omega \cdot \text{cm}$ or below.

Claim 4 (Original): The apparatus as claimed in claim 3, wherein said primary bias applying means is controlled by constant-voltage control.

Claim 5 (Original): The apparatus as claimed in claim 1, wherein said secondary image transferring means comprises secondary bias applying means for applying a secondary image transfer bias to the other surface of said intermediate image transfer body.

Claim 6 (Original): The apparatus as claimed in claim 5, wherein when a volumetric resistivity of said intermediate image transfer body is measured by a method that repeatedly applies a voltage v_2 of 50 V for a period of time t_3 of 60 seconds to said intermediate image transfer body and grounds said intermediate image transfer body for a period of time t_4 of 10 seconds a number of times N_2 of 1,000, a difference in absolute value between a logarithm of a first time of measurement and logarithm of a thousandth time of measurement is 2.1 log $\Omega \cdot \text{cm}$ or below.

Claim 7 (Original): The apparatus as claimed in claim 6, wherein said primary bias applying means is controlled by constant-voltage control.

Claim 8 (Original): The apparatus as claimed in claim 1, wherein said image carrier and said primary image transferring means comprise a plurality of image carriers and a plurality of primary image transferring means, respectively, and wherein toner images formed on said plurality of image carriers are sequentially transferred to said intermediate image transfer body one above the other by said plurality of primary image transferring means.

Claim 9 (Original): The apparatus as claimed in claim 8, wherein said secondary image transferring means comprises secondary bias applying means for applying a secondary image transfer bias to the other surface of said intermediate image transfer body.

Claim 10 (Original): The apparatus as claimed in claim 9, wherein when a volumetric resistivity of said intermediate image transfer body is measured by a method that repeatedly applies a voltage v_2 of 50 V for a period of time t_3 of 60 seconds to said intermediate image transfer body and grounds said intermediate image transfer body for a period of time t_4 of 10 seconds a number of times N_2 of 1,000, a difference in absolute value between a logarithm of a first time of measurement and logarithm of a thousandth time of measurement is $2.1 \log \Omega \cdot \text{cm}$ or below.

Claim 11 (Original): The apparatus as claimed in claim 10, wherein said primary bias applying means is controlled by constant-voltage control.

Claim 12 (Currently Amended): A direct image transfer type of image forming apparatus comprising:

an image carrier;

[[an]] a belt conveyor; and

image transferring means for transferring a toner image formed on said image carrier to a recording medium being conveyed by said belt conveyor, said image transferring means comprising bias applying means for applying an image transfer bias to a reverse surface of said belt conveyor opposite to a surface conveying said recording medium;

wherein when a surface resistivity of said belt conveyor is measured by a method that repeatedly applies a voltage v_1 of 200 V for a period of time t_1 of 60 seconds to said belt conveyor and grounds said belt conveyor for a period of time t_2 of 10 seconds a number of times N_1 of 1,000, a difference in absolute value between a logarithm of a first time of measurement and logarithm of a thousandth time of measurement is $0.5 \log \Omega/\square$ or below.

Claim 13 (Original): The apparatus as claimed in claim 12, wherein when a volumetric resistivity of said belt conveyor is measured by a method that repeatedly applies a voltage v_2 of 50 V for a period of time t_3 of 60 seconds to said belt conveyor and grounds said belt conveyor for a period of time t_4 of 10 seconds a number of times N_2 of 1,000, a difference in absolute value between a logarithm of a first time of measurement and logarithm of a thousandth time of measurement is $2.1 \log \Omega \cdot \text{cm}$ or below.

Claim 14 (Original): The apparatus as claimed in claim 12, wherein said image carrier and said image transferring means comprise a plurality of image carriers and a plurality of image transferring means, respectively, and wherein toner images formed on said

plurality of image carriers are sequentially transferred to the recording medium one above the other by said plurality of image transferring means.

Claim 15 (Original): The apparatus as claimed in claim 14, wherein when a volumetric resistivity of said belt conveyor is measured by a method that repeatedly applies a voltage v_2 of 50 V for a period of time t_3 of 60 seconds to said belt conveyor and grounds said belt conveyor for a period of time t_4 of 10 seconds a number of times N_2 of 1,000, a difference in absolute value between a logarithm of a first time of measurement and logarithm of a thousandth time of measurement is $2.1 \log \Omega \cdot \text{cm}$ or below.

Claim 16 (Original): An intermediate image transfer type of image forming apparatus comprising:

an image carrier;

an intermediate image transfer body to which a toner image is transferred from said image carrier;

primary image transferring means for transferring the toner image from said image carrier to said intermediate image transfer body; and

secondary image transferring means for transferring the toner image from said intermediate image transfer body to a recording medium;

wherein said primary image transferring means comprises primary bias applying means for applying a primary image transfer bias to said intermediate image transfer body, and

wherein said intermediate image transfer body has a surface potential attenuation ratio that attenuates, before a portion of said intermediate image transfer body applied with the primary image transfer bias is subject to a next primary image transfer, a potential remaining on said portion to a degree not disturbing said next primary image transfer.

Claim 17 (Original): The apparatus as claimed in claim 16, wherein said image carrier and said primary image transferring means comprise a plurality of image carriers and a plurality of primary image transferring means, respectively, and wherein toner images formed on said plurality of image carriers are sequentially transferred to said intermediate image transfer body one above the other by said plurality of primary image transferring means.

Claim 18 (Currently Amended): The apparatus as claimed in claim 17, a surface of said intermediate image transfer body to which the primary image transfer bias or ~~the a~~ secondary image transfer bias is applied has a surface resistivity ranging from $10^7 \Omega/\square$ to $10^{12} \Omega/\square$.

Claim 19 (Original): The apparatus as claimed in claim 18, wherein a maximum amount of toner to deposit on a line portion included in a single-color toner image, which is transferred to said intermediate image transfer body, is 0.7 mg/cm^2 .

Claim 20 (Original): The apparatus as claimed in claim 19, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to

deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.6.$$

Claim 21 (Original): The apparatus as claimed in claim 19, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.4.$$

Claim 22 (Currently Amended): The apparatus as claimed in claim 21 19, wherein the toner comprises spherical toner.

Claim 23 (Original): The apparatus as claimed in claim 22, wherein the spherical toner has a mean circularity of 0.95 or above.

Claim 24 (Original): The apparatus as claimed in claim 22, wherein said intermediate image transfer body has a single-layer structure.

Claim 25 (Original): The apparatus as claimed in claim 24, wherein said intermediate image transfer body comprises a surface layer at least at a side thereof to which the toner image is transferred.

Claim 26 (Original): The apparatus as claimed in claim 25, wherein said surface layer is formed of any one of a fluorine resin, a silicone resin and a fluorine-containing material.

Claim 27 (Original): The apparatus as claimed in claim 16, wherein said intermediate image transfer body has a surface potential attenuation ratio that attenuates a potential remaining on a portion of said intermediate image transfer body applied with the primary image transfer bias V_o to $V_o/2$ in 5 seconds.

Claim 28 (Original): The apparatus as claimed in claim 27, wherein said image carrier and said primary image transferring means comprise a plurality of image carriers and a plurality of primary image transferring means, respectively, and wherein toner images formed on said plurality of image carriers are sequentially transferred to said intermediate image transfer body one above the other by said plurality of primary image transferring means.

Claim 29 (Currently Amended): The apparatus as claimed in claim 28, a surface of said intermediate image transfer body to which the primary image transfer bias or the a secondary image transfer bias is applied has a surface resistivity ranging from $10^7 \Omega/\square$ to $10^{12} \Omega/\square$.

Claim 30 (Original): The apparatus as claimed in claim 29, wherein a maximum amount of toner to deposit on a line portion included in a single-color toner image, which is transferred to said intermediate image transfer body, is 0.7 mg/cm^2 .

Claim 31 (Original): The apparatus as claimed in claim 30, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.6.$$

Claim 32 (Original): The apparatus as claimed in claim 30, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.4.$$

Claim 33 (Currently Amended): The apparatus as claimed in claim 32 30, wherein the toner comprises spherical toner.

Claim 34 (Original): The apparatus as claimed in claim 33, wherein the spherical toner has a mean circularity of 0.95 or above.

Claim 35 (Original): The apparatus as claimed in claim 33, wherein said intermediate image transfer body has a single-layer structure.

Claim 36 (Original): The apparatus as claimed in claim 35, wherein said intermediate image transfer body comprises a surface layer at least at a side thereof to which the toner image is transferred.

Claim 37 (Original): The apparatus as claimed in claim 36, wherein said surface layer is formed of any one of a fluorine resin, a silicone resin and a fluorine-containing material.

Claim 38 (Original): The apparatus as claimed in claim 16, wherein assuming that a period of time between preceding primary image transfer and following image transfer is T seconds, said intermediate image transfer body has a surface potential attenuation ratio that attenuates a potential remaining on a portion of said intermediate image transfer body applied with the primary image transfer bias V_o to $V_o/2$ or below in T seconds.

Claim 39 (Original): The apparatus as claimed in claim 38, wherein said image carrier and said primary image transferring means comprise a plurality of image carriers and a plurality of primary image transferring means, respectively, and wherein toner images formed on said plurality of image carriers are sequentially transferred to said intermediate image transfer body one above the other by said plurality of primary image transferring means.

Claim 40 (Original): The apparatus as claimed in claim 39, a surface of said intermediate image transfer body to which the primary or the secondary image transfer bias is applied has a surface resistivity ranging from $10^7 \Omega/\square$ to $10^{12} \Omega/\square$.

Claim 41 (Original): The apparatus as claimed in claim 40, wherein a maximum amount of toner to deposit on a line portion included in a single-color toner image, which is transferred to said intermediate image transfer body, is 0.7 mg/cm^2 .

Claim 42 (Original): The apparatus as claimed in claim 41, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are $a \text{ mg/cm}^2$ and $b \text{ mg/cm}^2$, respectively, a ratio a/b lies in a range of $1.0 \leq a/b \leq 1.6$.

Claim 43 (Original): The apparatus as claimed in claim 41, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are $a \text{ mg/cm}^2$ and $b \text{ mg/cm}^2$, respectively, a ratio a/b lies in a range of $1.0 \leq a/b \leq 1.4$.

Claim 44 (Currently Amended): The apparatus as claimed in claim 43 41, wherein the toner comprises spherical toner.

Claim 45 (Original): The apparatus as claimed in claim 44, wherein the spherical toner has a mean circularity of 0.95 or above.

Claim 46 (Original): The apparatus as claimed in claim 44, wherein said intermediate image transfer body has a single-layer structure.

Claim 47 (Original): The apparatus as claimed in claim 46, wherein said intermediate image transfer body comprises a surface layer at least at a side thereof to which the toner image is transferred.

Claim 48 (Original): The apparatus as claimed in claim 47, wherein said surface layer is formed of any one of a fluorine resin, a silicone resin and a fluorine-containing material.

Claim 49 (Original): An intermediate image transfer type of image forming apparatus comprising:

an image carrier;

an intermediate image transfer body to which a toner image is transferred from said image carrier;

primary image transferring means for transferring the toner image from said image carrier to said intermediate image transfer body; and

secondary image transferring means for transferring the toner image from said intermediate image transfer body to a recording medium;

wherein said primary image transferring means comprises primary bias applying means for applying a primary image transfer bias to said intermediate image transfer body,

wherein said secondary image transferring means comprises secondary bias applying means for applying a secondary image transfer bias to said intermediate image transfer body, and

wherein said intermediate image transfer body has a surface potential attenuation ratio that attenuates, before a portion of said intermediate image transfer body applied with the secondary image transfer bias is subject to a next primary image transfer, a potential remaining on said portion to a degree not disturbing said next primary image transfer.

Claim 50 (Original): The apparatus as claimed in claim 49, wherein said intermediate image transfer body has a surface potential attenuation ratio that attenuates a potential remaining on a portion of said intermediate image transfer body applied with the secondary image transfer bias V_1 to $V_1/2$ in 5 seconds.

Claim 51 (Original): The apparatus as claimed in claim 50, a surface of said intermediate image transfer body to which the primary or the secondary image transfer bias is applied has a surface resistivity ranging from $10^7 \Omega/\square$ to $10^{12} \Omega/\square$.

Claim 52 (Original): The apparatus as claimed in claim 51, wherein a maximum amount of toner to deposit on a line portion included in a single-color toner image, which is transferred to said intermediate image transfer body, is 0.7 mg/cm^2 .

Claim 53 (Original): The apparatus as claimed in claim 52, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to

deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.6.$$

Claim 54 (Original): The apparatus as claimed in claim 52, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.4.$$

Claim 55 (Currently Amended): The apparatus as claimed in claim 54 52, wherein the toner comprises spherical toner.

Claim 56 (Original): The apparatus as claimed in claim 55, wherein the spherical toner has a mean circularity of 0.95 or above.

Claim 57 (Original): The apparatus as claimed in claim 55, wherein said intermediate image transfer body has a single-layer structure.

Claim 58 (Original): The apparatus as claimed in claim 57, wherein said intermediate image transfer body comprises a surface layer at least at a side thereof to which the toner image is transferred.

Claim 59 (Original): The apparatus as claimed in claim 58, wherein said surface layer is formed of any one of a fluorine resin, a silicone resin and a fluorine-containing material.

Claim 60 (Original): The apparatus as claimed in claim 49, wherein assuming that a period of time between secondary image transfer and primary image transfer following said secondary image transfer is U seconds, said intermediate image transfer body has a surface potential attenuation ratio that attenuates a potential remaining on a portion of said intermediate image transfer body applied with the secondary image transfer bias V_1 to $V_2/2$ or below in T seconds.

Claim 61 (Original): The apparatus as claimed in claim 60, a surface of said intermediate image transfer body to which the primary or the secondary image transfer bias is applied has a surface resistivity ranging from $10^7 \Omega/\square$ to $10^{12} \Omega/\square$.

Claim 62 (Original): The apparatus as claimed in claim 61, wherein a maximum amount of toner to deposit on a line portion included in a single-color toner image, which is transferred to said intermediate image transfer body, is 0.7 mg/cm^2 .

Claim 63 (Original): The apparatus as claimed in claim 62, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.6.$$

Claim 64 (Original): The apparatus as claimed in claim 62, wherein the toner comprises spherical toner, and wherein assuming that the maximum amount of toner to deposit on the line portion of the single-color toner image and a maximum amount of toner to deposit on a solid portion of said toner image are a mg/cm² and b mg/cm², respectively, a ratio a/b lies in a range of

$$1.0 \leq a/b \leq 1.4.$$

Claim 65 (Currently Amended): The apparatus as claimed in claim 64 62, wherein the toner comprises spherical toner.

Claim 66 (Original): The apparatus as claimed in claim 65, wherein the spherical toner has a mean circularity of 0.95 or above.

Claim 67 (Original): The apparatus as claimed in claim 65, wherein said intermediate image transfer body has a single-layer structure.

Claim 68 (Original): The apparatus as claimed in claim 67, wherein said intermediate image transfer body comprises a surface layer at least at a side thereof to which the toner image is transferred.

Claim 69 (Original): The apparatus as claimed in claim 68, wherein said surface layer is formed of any one of a fluorine resin, a silicone resin and a fluorine-containing material.